

## REMARKS

The drawings were objected to under 37 C.F.R. §1.83(a), because of limitations of claim 8 were not shown in the drawings, as filed. The Examiner will please note that claim 8 has been cancelled.

Claims 1-18 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the reasons set forth in numbered paragraph 5 of the Office Action Mailed April 9, 2007. By the foregoing proposed amendments to these claims, Applicant believes that this ground for rejecting the claims has been rendered moot.

Claims 1-5 were rejected under 35 U.S.C. §102(b) as being anticipated by *Brown*. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Brown* in view of EP 1 057 776. Claims 10-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Brown* in view of EP-776. Claims 1-10 were also rejected under 35 U.S.C. §103(a) as being unpatentable over *Brown* in view of *Pollack*. Claims 19 and 20 were rejected under 35 U.S.C. §102(b) as being unpatentable over *Brown* in view of *Mathias*. The Examiner did state that claims 6 and 7 (if rewritten to depend from claim 6), 8, 15 and 16 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph, and if rewritten to include all of the limitations of the base claim and any intervening claims.

For the reasons that follow, Applicant traverses the prior art rejections of the claims set forth above.

Claims 1 to 18 have been amended so that the subject matter of these claims is now indicated to be a tower crane and no longer a machine for lifting and handling loads.

Claim 1 is further amended to recite that the stanchion is attached to the mast and extends above the mast. It is further specified that there is a jib-holding cable (before: jib holding *line*), and that this cable is attached to the jib and is guided over a pulley on said stanchion. The term *jib-holding line* has been replaced by the term *jib-holding cable* in dependent claims 10, 11 and 12, as well. As a matter of fact, the word *cable* is a better translation than the word *line* of the French word *élingue* appearing in the French text of the PCT application from which the present application issued. The word *cable* is also clearly supported by the drawings and the arrangement as described.

In addition, in claim 1 the term *variable slope* has been changed to *varying slope*, which is also a more precise phrase in the present case. Furthermore, it has been specified that the guiding track has at least a first portion and a second portion, said first portion being closer to the mast of the tower crane, and that the slope in the first portion is smaller than the slope in the second portion.

Claim 4 has been amended so as to clarify that the term *sigmoidal* refers to *s-shaped*, in reply to the objection in paragraph 5 of the Office Action mailed April 9, 2007.

Claim 8 has been cancelled.

In claims 1 and 9, the expression *chosen so that* has been replaced by the expression *such that*, which is more generally used in the English language.

Claim 14 has been amended so that the antecedent basis has been properly introduced.

New dependent claims 19 and 20 have been added on the basis of the disclosure of paragraph [0076] and Figs. 10a to 10c of the published application, where an electric motor fixed to the jib foot is mentioned. Winding and unwinding winches are mentioned in the same paragraph.

New independent claims 21 and 22 have been added.

Claim 21 is based on claims 1, 5 (amended) and 6, whereby the subject matter of claim 5 has been amended in present claim 21, in that the guiding track is indicated to consist of "at least one curvilinear rail" instead of "a pair of rails." New claim 23 is based on claims 1, 13 and 15 as previously presented.

These new independent claims were held to allowable as rewritten in paragraph 12 of the Office Action mailed April 9, 2007.

The amended claims as submitted above address all of the rejections under 35 U.S.C. §112, second paragraph, and further define the present invention so as to distinguish it more clearly and specifically over the prior art.

In particular, the present invention as defined in the amended claims is non-obvious over the cited prior art documents of *Brown* (US 2,703,180), *Yerly* (EP 1057776), *Pollack* (US 3,062,384), *Mathias* (US 2,521,861), and *Toomey* (US 834,647), as detailed below.

Firstly, the present invention now relates to tower cranes. The cited prior art documents of *Brown*, *Pollack*, *Mathias* and *Toomey* do not relate to tower cranes, but to cranes generally situated directly on the ground (*Pollack*, *Mathias*, *Toomey*), or on a slightly elevated platform (*Brown*), arranged so as to unload ships or freight trains. These cranes are not suitable to operate at considerable heights of 10 to 50 m, or more, above ground level, such as those used in the field of construction, and in particular as used in the construction of buildings.

Furthermore, claim 1 as presently amended specifies that the jib-holding cable is attached to the jib on one side, guided over a pulley situated on the stanchion and attached to the counter weight. Claim 1 thus differs from *Brown*, which discloses in Figure 5 a construction on the basis

of rigid bars (carriage 37, racks 69, and struts 40) that connect the counterweight (126) to the jib foot at point 39.

Most importantly, in Brown's crane the counterweight exerts compression on said rigid bars, thus pushing the jib for lifting it (at point 42 in Fig. 5). The jib-holding cable of the present invention, in contrast, is directly attached to the counterweight and thus only subjected to traction. It is well known in the art of mechanics that construction materials such as steel are significantly more tolerant and resistant to traction than to compression. With the present invention of amended claim 1, there is no risk of buckling and the overall construction needs less and lighter pieces.

The holding line according to amended claim 1, which requires less and lighter pieces, is further advantageous over *Brown* because it allows for much quicker manoeuvrability and higher mobility. It is to be noted that *Brown* requires a slowly operating luffing mechanism (34 in Fig. 5) using a toothed wheel system for controlling the lifting and lowering of the jib. The above-mentioned rigid bars (37, 69, 40 in Fig. 5) are compressed by the counterweight and pass through the luffing mechanism. The tower crane of amended claim 1 does not require such a complex luffing mechanism and thus again works with less pieces and requires substantially less maintenance.

In summary, a tower crane as defined in amended claim 1, having a counterweight connected directly to a jib by a jib-holding cable, the cable being guided over a pulley of a stanchion, is not disclosed by *Brown* and cannot be derived from *Brown* in any logical or obvious way.

Although amended claim 1 was rejected only in view of *Brown*, the differences between the present invention and the prior art documents cited with respect to the dependent claims are addressed below.

*Yerly* fails to disclose a moving counterweight. *Yerly* also fails to disclose an embodiment of a crane having a rotating pivot with a jib-holding line connecting a counterweight with the jib so as to obtain the advantage of high manoeuvrability and mobility of the crane due to the varying forces exerted by the counterweight on the jib.

*Pollack* does not relate to a tower crane and lacks a counterweight guided on a track. Therefore, *Pollack* is not relevant for independent amended claim 1 of the present application. The same statement holds true for *Mathias*.

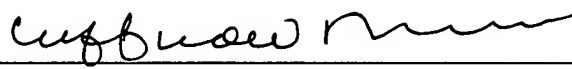
With respect to *Toomey*, this reference does not relate to a tower crane, and it fails to disclose a counterweight connected to the jib. In this reference the jib (C) is fixed by a cable lacking a reference number, see for example Figure 5. In contrast, *Toomey* teaches that the charge carrying cable needs to be connected to a balance weight "q" by one or several cables guided over a complex system of pulleys.

Cranes of the type as disclosed in *Toomey*, where the carried charge (not the jib) is connected by cables of transmission to a counterweight, suffer from serious problems when the charge is quickly and brutally dropped. In this case, the counterweight may move in an uncontrolled manner, and, if the crane was situated on a mast, a serious problem of disequilibria could be the consequence.

In conclusion, the cited prior art documents, taken alone or combined with each other, fail to disclose a quickly manoeuvrable tower crane with improved mobility and high security as defined by the features of amended claim 1.

Therefore, the applicant respectfully submits that the claims as presently presented are in condition for allowance.

Respectfully Submitted,

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